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(54) Title: SURFACE TREATMENT WITH POLYPEPTIDES TO IMPROVE FIBROBLAST ADHESION TO HYALURONAN

(54) 发明名称: 用多肽化表面处理法改进成纤维素对透明质酸之黏附性

(57) Abstract: The present invention relates to hyaluronan (HyA), which are extracellar media, they have special chemical proptery to confer the cell adhesion and can promote cell growth. The limit a lot the use in the artificial biomaterial tissue engineering as they are soluble material in water. The present invention provides a new method to achieve bifunctions, one of which is to decrease HyA solubility by polypeptides, and the other is to promote cell adhesion through the effection of the cell surface adhesion molecular receptor, using a new method to treat surfaces using polypeptides to improve cell adhesion to HyA, HyA being first crosslinked by glutaraldehyde to strand forms, then being treated on the surfaces by polylysine, glycine or glutamate respectively. The modified HyA are incubated together with fibroblast in vitro for utility experiments. The cell adhesion and proliferation are assayed by histology and immunohistochemistry test. It is showed: (1) polylysine can remarkably improve fibroblast adhesion to HyA; (2) HyA can be crosslinked by glutaraldehyde so as to decrease biodegradation; (3) it is verified both in vivo and in vitro that the modified HyA have high biological MHC, they are new complex biomaterials which have potential use in industrial scale.

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